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REPUBLIC OF FRANCE

PATENT OF INVENTION

MINISTRY OF INDUSTRY

INDUSTRIAL PROPERTY
DEPARTMENT

Report No.: 781.536

No. 1.220.851

International Classification:

A 62 b

Protective dust mask.

Company with limited responsibility: SOCIÉTÉ D'EXPLOITATION DES PLASTIQUES,
residing in France (Seine).

Applied on December 12, 1958, at 4:18 p.m., in Paris.
Issued on January 11, 1960 - Published on May 30, 1960.

(Patent of invention whose issuance was postponed in execution of article 11, § 7, of the
law of July 5, 1844 modified by the law of April 7, 1902).

The subject of this invention is improvements made to protective dust masks having pocket shape covering the face from the chin up to the start of the nose and attached at the back of the head with an elastic cord, special dispositions being provided to elastically apply pocket contour onto the face notably in the nose and cheeks areas.

This mask is satisfactory when it is correctly placed. But the experience shown that workers having no special knowledge and technical training and who have to use it, often put it in reverse, i.e. they put the lower part intended for the chin over their nose and inversely such that sealing is no longer ensured.

Improvements made to the invention consists of an arrangement such that the mask has a symmetrical shape with regard to the line joining points for fixing attachment cord behind the head, such that the orientation with which the mask is worn, has no importance.

The invention is particularly applicable to masks described with French patent NO. 1.074.137 of February 7, 1953 and made up with a flexible sheet folded over itself and welded at the joints such to make a pocket.

Symmetrical arrangement according to the invention has then, as a consequence and at two opposing edges of the mask, a special sealing device fitted to the nose in this known type of mask, only on one side, this additional sealing device at the chin making the other part useless, the usual sealing bump on the rest of the contour.

Annexed drawing allows making, for instance, an embodiment of the above mentioned mask for better understanding the invention.

(End of column 1, page 1)

Figure 1 is a perspective view from the outside of the mask, placed on the face.

Figure 2 is a view from the inside.

Figure 3 shows, before shaping, cut sheet used for the making of the mask.

Shown mask is, similar to the one described in patent No. 1.074.137, made up with a microporous sheet 1 cut (Fig. 3) according to a symmetrical surface with regard to X-X axis along which this sheet is folded, both edges 1-1' and 2-2' being then welded edge-to-edge to form a pocket.

Both opposite and rounded edges 3 and 3a are, in addition, folded onto themselves and welded in 4 and 4a such that parts 5-5' and 5a-5'a, with which folded edges are connected to the rest of the mask contour, form an elastic and deformable pad fitting to the face in spite of contour irregularities. These irregularities particularly appear in the nose area, and for this purpose the just described device was proposed in patent No. 1.074.137. However, they appear somewhat in the chin area such that symmetrical disposition, described and shown above, is advantageous not only due from the symmetry itself, as exposed above, but also from the stand point of sealing. In return, it was noted that, on side parts of the mask, it was not necessary to have any special arrangement thereon.

Usual elastic cords 6 for fixing the mask onto the head, will be placed on one or the other parts, but the closest possible to symmetry line. In the example shown above, they are fitted to the face with pin 7 and pad 8 according to the device which is the subject of patent No. 1.137.967 of the applicant.

(End of column 2, page 1)

SUMMARY

The subject of the invention is improvements made to protective dust masks having pocket shape covering the face from the chin up to the start of the nose and mainly relates to the following points:

1. This pocket is symmetrically conformed about a transversal line of the face, such to prevent any hesitation for placing it correctly;
2. In the case of a mask described in French patent No. 1.074.137 made up with a sheet folded onto itself, and welded at joints to form the pocket, edges of this pocket are, in the chin and in nose areas, i.e. lower and the upper parts of the mask, folded onto themselves such to form an elastic deformable pad of the type described in French patent No. 1.074.137.

Company with limited responsibility:
SOCIETE D'EXPLOITATION DES PLASTIQUES

By the power of attorney:
G. Beau de Loménie, André Armengaud and G. Houssard.

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N° 1.220.851

Société à Responsabilité Limitée dite :
Société d'Exploitation des Plastiques

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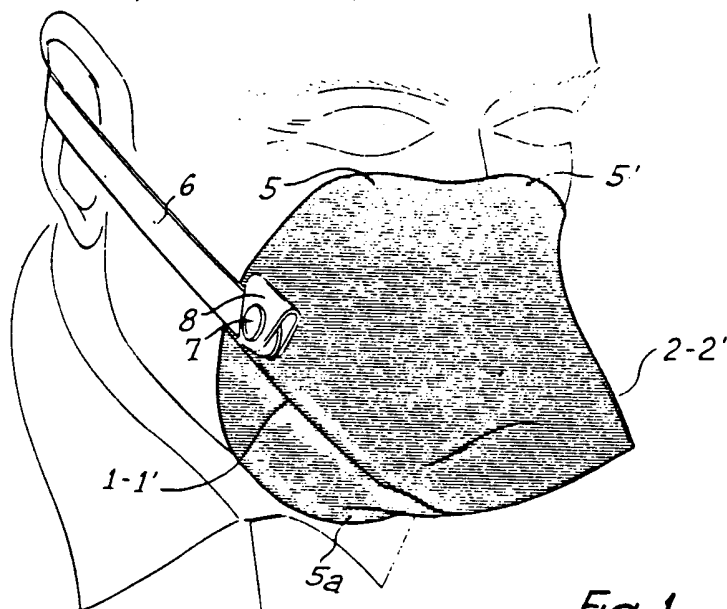


Fig. 1

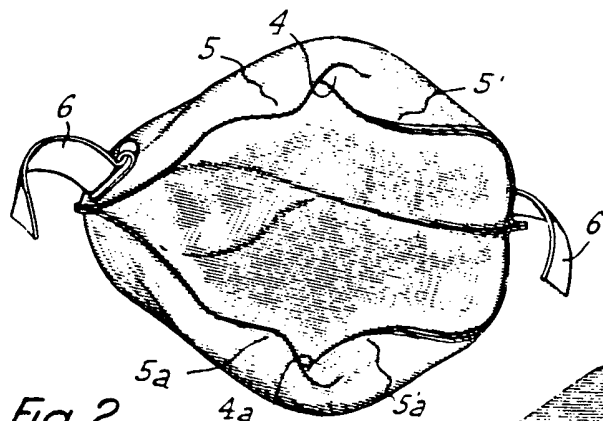


Fig. 2

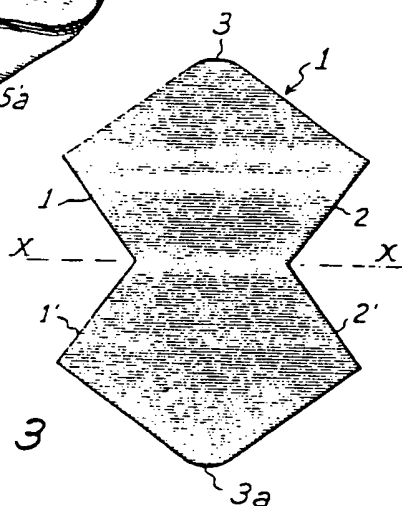


Fig. 3



BREVET D'INVENTION

P.V. n° 781.536

N° 1.220.851

Classification internationale :

A 62 b

Masque de protection contre les poussières.

Société à responsabilité limitée dite : SOCIÉTÉ D'EXPLOITATION DES PLASTIQUES résidant en France (Seine).

Demandé le 12 décembre 1958, à 16^h 18^m, à Paris.

Délivré le 11 janvier 1960. — Publié le 30 mai 1960.

(Brevet d'invention dont la délivrance a été ajournée en exécution de l'article 11, § 7, de la loi du 5 juillet 1844 modifiée par la loi du 7 avril 1902.)

L'invention a pour objet des perfectionnements aux masques de protection contre les poussières en forme de poche enveloppant le visage depuis le menton jusqu'à la naissance du nez et fixés en arrière de la tête par un lien élastique, des dispositions spéciales étant prévues pour appliquer élastiquement le contour de la poche sur le visage notamment au raccordement du nez et des joues.

Ce masque donne toute satisfaction lorsqu'il est correctement mis en place. Mais l'expérience a montré que les ouvriers sans connaissance spéciale et sans formation technique qui sont amenés à l'utiliser le mettent souvent en place à l'envers c'est-à-dire en plaçant sur le nez la partie inférieure destinée au menton et inversement de sorte que l'étanchéité n'est plus assurée.

Les perfectionnements suivant l'invention consistent dans un aménagement d'un tel masque suivant une forme symétrique par rapport à la ligne joignant les points de fixation des liens d'attache en arrière de la tête, de manière que le sens dans lequel le masque est mis en place soit sans importance.

L'invention est applicable en particulier aux masques du type connu par le brevet français n° 1.074.137 du 7 février 1953 et constitué par une feuille souple repliée sur elle-même et soudée aux jointures de manière à former une poche.

L'aménagement symétrique suivant l'invention a alors pour conséquence de prévoir aux deux bords opposés du masque, le dispositif spécial d'adaptation étanche sur le nez prévu dans ce masque connu, d'un côté seulement, ce dispositif d'étanchéité supplémentaire au menton rendant d'autre part inutile le bourrelet d'étanchéité usuel sur le reste du contour.

Le dessin annexé permet par un exemple de réalisation dans le cas du masque défini ci-dessus de mieux comprendre l'invention.

La figure 1 est une vue en perspective du masque vu de l'extérieur, mis en place sur le visage.

La figure 2 est une vue par l'intérieur.

La figure 3 montre, avant mise en forme, la feuille découpée servant à la fabrication du masque.

Le masque représenté est, comme celui décrit au brevet n° 1.074.137, constitué par une feuille de matière microporeuse 1 découpée (fig. 3) suivant une surface symétrique par rapport à l'axe X-X suivant laquelle cette feuille est repliée, les deux bords 1-1' et 2-2' étant ensuite soudés bord à bord pour former une poche.

Les deux bords arrondis opposés 3 et 3a sont en outre repliés sur eux-mêmes et soudés en 4 et 4a de manière que les parties 5-5' et 5a-5'a par lesquelles les bords repliés se raccordent au reste du contour du masque forment un bourrelet élastique et déformable s'adaptant au visage malgré les irrégularités de son contour. Ces irrégularités se manifestent surtout dans la zone du nez, et c'est dans ce but qu'avait été prévu dans le brevet n° 1.074.137, le dispositif qui vient d'être décrit. Elles se manifestent cependant dans une certaine mesure au menton, de sorte que la disposition symétrique, décrite et représentée, est avantageuse non seulement en raison de la symétrie même, comme exposé plus haut, mais également au point de vue de l'étanchéité. Il a été par contre constaté que, sur les parties latérales du masque, il n'était nécessaire de prévoir aucun aménagement spécial à cet effet.

Les liens élastiques usuels 6 pour la fixation du masque sur la tête seront placés sur l'une ou l'autre de ses deux parties, mais le plus près possible de la ligne de symétrie. Dans l'exemple représenté ils viennent s'adapter par l'intermédiaire d'un téton 7 et d'une patte 8 suivant le dispositif faisant l'objet du brevet n° 1.137.967 de la demanderesse.

[1.220.851]

RÉSUMÉ

— 2 —

L'invention a pour objet des perfectionnements aux masques de protection contre les poussières en forme de poche enveloppant le visage depuis le menton jusqu'à la naissance du nez et porte principalement sur les principaux points suivants :

1° Cette poche est conformée symétriquement par rapport à une ligne transversale au visage, de manière à éviter toute hésitation pour sa mise en place correcte;

2° Dans le cas d'un masque du type connu par le brevet français n° 1.074.137 constitué

d'une feuille repliée sur elle-même et soudée aux jointures pour former la poche, les bords de cette poche sont, dans la zone du menton et dans la zone du nez c'est-à-dire à la partie inférieure et à la partie supérieure, repliés sur eux-mêmes de manière à former un bourrelet élastique déformable du type décrit dans ce brevet français n° 1.074.137.

Société à responsabilité limitée dite :

SOCIÉTÉ D'EXPLOITATION DES PLASTIQUES

Par procuration :

G. BEAU DE LOMÉZIE, André ARMENCAUD et G. HOUSSARD

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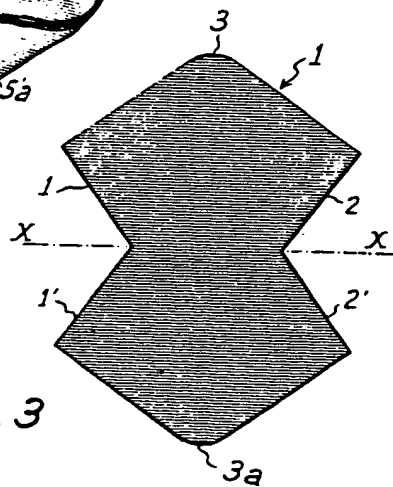
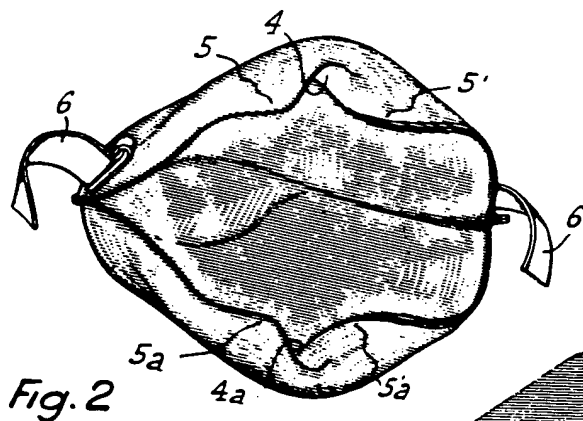
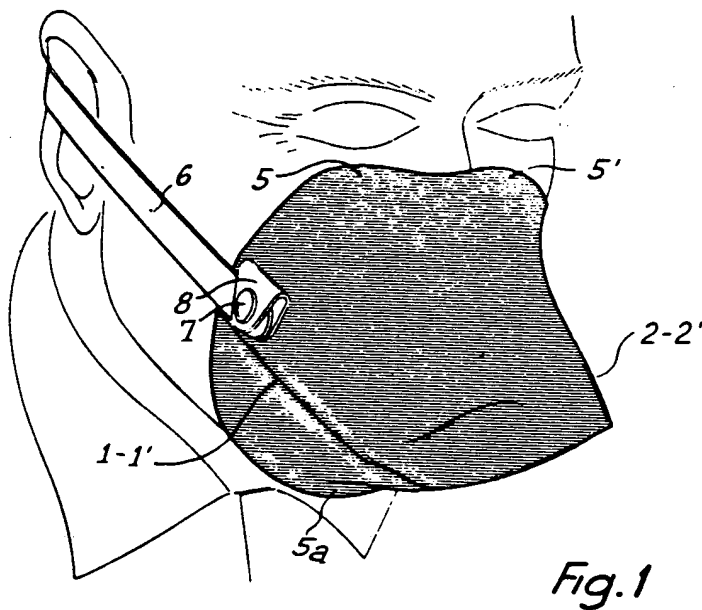
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134,432

PATENT



SPECIFICATION

Application Date, Jan. 11, 1919. No. 810/19.

Complete Accepted, Nov. 6, 1919

COMPLETE SPECIFICATION.

An Improved Mask for Protection against Infectious Diseases.

I, CONDE DE RAMIREZ DE ARELLANO, Private Chamberlain of His Holiness the Pope and Weekly Chamberlain of the King of Spain, of Batchelors Farm, near Horsham, Sussex, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to masks or the like protective devices to be used by the wearers for prevention against infectious diseases to which they may be liable from breathing noxious atmospheres carrying the germs of disease, and provides especially for a simple economic construction for such mask to allow
10 it to be within the reach of everyone, and the improved mask will carry medicated media for arresting or destroying the infectious germs which would otherwise be readily passed to the lungs of the wearer.

In carrying out this invention, particular attention has been paid to the most simple and economic construction, and this is carried out by employing
15 two circular metallic portions capable of being secured together in accordance with their construction, each being provided with a flange in such a manner that when the two parts are secured together they will firmly hold between the flanged parts the portion of textile material arranged as hereafter referred to and enclosing the mouth and nostrils.

These two circular metallic portions are formed so as each to make up the half of a small circular box the sides of which are stamped or moulded in the manner of screw threads so that they will be readily attached together and the covering or end portion of each of which is perforated to allow for the passage
20 of air to and from the lungs, and when these two parts are screwed together enclosing between them the edges of a circular opening in the textile fabric, they will form a small box or compartment in which is placed medicated cotton wool or an equivalent carrier which is sufficiently impregnated or saturated with a suitable chemical solution for the destruction of any germs or microbes which might otherwise pass from the atmosphere to the lungs of the
25 wearer of the improved mask.

The suitable textile material as before mentioned is securely held through a circular opening in the same to the compartment holding the medicated substance, and this textile material is arranged to comfortably fit the face of the wearer so that the perforated compartment covers the mouth and the upward
35 reaching portion of the textile material which is preferably silk is shaped so as to cover the nostrils. The edges of the textile material at the point covering the nostrils are provided with a piece of soft metallic wire which is easily adjusted to the shape of the nose and can therefore be closely fitted for the

[Price 6d.]

wearer's individual comfort, assisting to make a comfortable fit of the mask against the face at this position and so excluding the air from entering to any material extent at this position.

The sides of the flexible textile material are preferably fitted with elastic loops to fit over the ears of the wearer, so bringing the perforated compartment 5 carrying the medically impregnated substance close over the mouth of the wearer, but the mask may be secured to the head by a band passing to the back of the head of the wearer or by any other suitable means.

In order that this invention may be more fully understood, I will now describe it with reference to the accompanying sheets of drawings in which like 10 letters of reference refer to like parts throughout, viz.:—

Fig. 1 is a full front view of the completed mask as it will be worn by the wearer, and

Fig. 2 is a plan of the same taken from above showing the curved part to fit the nose of the wearer.

Fig. 3 is a front view of the flexible textile portion of the improved mask with a portion cut away at the top so as to show the fitting of the soft metallic wire arranged to fit over the nose. This figure also shows the circular opening arranged to be gripped between the two screwed portions before referred to containing the impregnated carrier of the medicament. 15

Figs. 4 and 5 are respectively the top and bottom metallic portions which can be screwed together and between which is placed the medicated cotton wool or its equivalent saturated with the medicated media for destroying infectious germs, and 20

Fig. 6 is a section taken across the mask showing the two metallic halves 25 containing the impregnated substance fitted together and the soft wire in section fitting the nose, the remaining portions being in part elevation.

In reference to the aforementioned figures, *a* shows the textile material fitting to the face of the wearer, the part fitting to the nose being marked *a*¹, and this part is fitted with a soft metallic wire *a*² which can be bent comfortably to fit the shape of the nose of the wearer. This textile covering is shaped to gather together at each side and has attached to each side an elastic loop, or band *a*³ for fixing over the ears of the wearer. *b* shows the outside of the two metal halves *b*, *b*¹ with perforated ends and screw threaded sides *b*⁴ holding the impregnated substance *b*³, and these two portions *b* and *b*¹ grip 30 between them at their flanged parts *b*² the edges of a circular opening *a*⁴ in the textile material *a*, so that the box-like construction *b* is simply and economically carried by the flexible textile material *a*.

The flexible textile material of this mask will preferably be of silk of a suitable colour and shaped to fit comfortably over the face of the wearer, and 40 the two screwed portions forming a container for the impregnated substance are preferably made in aluminium or such other light metal, or they may also be made of celluloid or any other suitable substance, each part of the compartment being sufficiently perforated for free inspiration and expiration.

In connection with masks for the purpose hereinbefore described it has previously been proposed to employ a box made of two metallic portions screwed together and containing a valve. Further it is not novel *per se* to attach such masks by ear loops, or to provide flexible metallic stiffening for the part which fits over the nose. 45

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed, I declare that 50 what I claim is:—

1. An improved mask for protection against infectious diseases comprising a suitably shaped piece of textile material fitting over the respiratory openings of the wearer, and two metallic perforated portions fitting together one within 55 the other and provided with flanges between which is gripped the edge of a

circular opening in the said textile material, these two portions forming a container for carrying medical substances, the sides of the mask being fitted with loops or suitable devices for fixing to the ears or back of the head and the top portion of the mask being provided with a soft metallic wire for fitting
5 close to the nose of the wearer, substantially as described and illustrated.

2. An improved mask for protection against infectious diseases as claimed in Claim 1, wherein the two parts carrying the medical substances are screwed together firmly gripping between them the edge of a circular opening in the textile material fitting to the face of the wearer.

10 3. An improved mask for protection against infectious diseases, constructed and operating substantially as described in the specification and illustrated by the accompanying drawings.

Dated this 11th day of January, 1919.

15

RAYNER & Co.,
5, Chancery Lane, London, W.C. 2,
Agents for the Applicant.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1919.

[This Drawing is a reproduction of the Original on a reduced scale.]

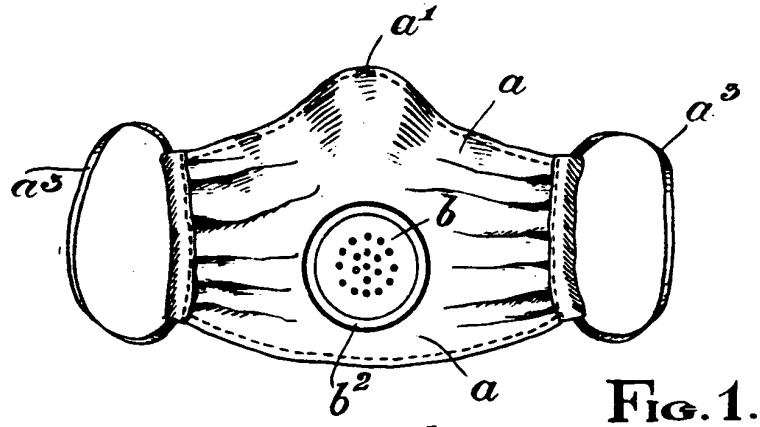


FIG. 2.

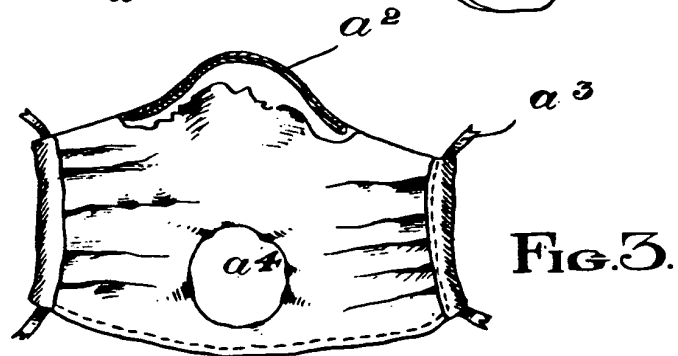
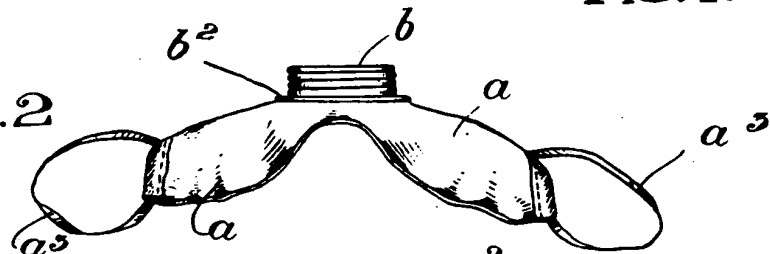


FIG. 3.

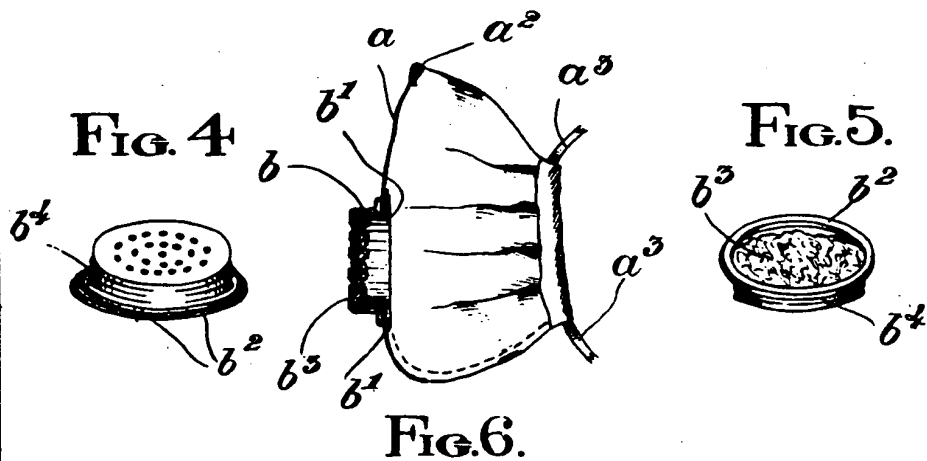


FIG. 4.

FIG. 5.

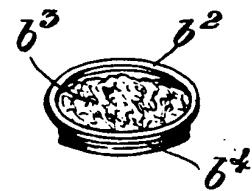


FIG. 6.